

Docket No.: 03-41US
Serial No. 10/788,592

REMARKS

This submission is in response to the Office Action, dated May 28, 2008, a response to which is due on August 28, 2008. As this submission is timely submitted and no additional excess claims have been added, there are no fees due.

I. STATUS OF THE CLAIMS:

Applicants appreciate the Examiner's withdrawal of the previous rejections, and the indication of allowability of claims 47 and 51, and 4 and 5 if amended to independent form. The above amendments are not intended as an acquiescence to any rejection, but merely to expedite prosecution and aid efficient advancement of this application to issuance.

Accordingly, claims 1 and 20 have been amended to delete the terms "vegetable oil, or mixtures thereof" and to incorporate the limitations of allowable claim 4 "wherein said fatty acid ester comprises an acyl chain comprising from 12 to 30 carbon atoms." Accordingly, claim 1 should now be in condition for allowance, claim 4 has been canceled, and claim 5 has been amended to depend from claim 1.

Claim 52 has been amended as suggested by the Examiner's supervisor, Walter Griffin, for clarity and now recites "one or more of a fatty acid ester, a vegetable oil, or a nitroarylalkylether."

New claims 54-56 have been added. These claims are dependent from amended claims 1 and 20 respectively (from which the terms "vegetable oil, or mixtures thereof" have been deleted), and recite vegetable oil as an additional constituent of the liquid membrane. Therefore, claims 54-56 recite the use of a vegetable oil in the liquid membrane as a mixture with a fatty acid ester comprising an acyl chain comprising from 12 to 30 carbon atoms. Claims 54 and 55 find support in original claims 1 and 20 and in the Specification on page 10 lines, 13-15. Claim 6 has been amended to correct dependency and now depends from claim 54.

Accordingly, upon entry of this amendment, claims 1, 2, 5, 6, 9-20, 22-24, and 46-56 are pending and under examination. No new matter has been introduced by way of these amendments.

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II. WITHDRAWN REJECTIONS AND ALLOWABLE SUBJECT MATTER

Applicants appreciate the withdrawal of rejections in response to the arguments submitted in the amendment dated February 14, 2008. Applicants appreciate the indication of allowable subject matter set forth one pages 10-11 in the Office Action. According to the Examiner, claims 47 and 51 are now allowable over the art of record, as well as claims 4 and 5 if amended to independent form.

III. INTERVIEW SUMMARY

Applicants appreciate the courtesies extended by Examiner Christine Mui and the Examiner's supervisor, Walter Griffin, in the interview conducted on July 9, 2008. In that interview, the claims recited above were discussed, and the Examiners indicated that the claims appeared to be in condition for allowance. However, the Examiners did not opt to enter the amended claims by Examiner's amendment and instead requested that the claims be submitted in an amendment after final office Action. The Examiners also agreed to contact the undersigned attorney in the event there are any unresolved issues remaining prior to issuing a Notice of Allowance.

IV. REJECTIONS UNDER 35 U.S.C. § 103(a) OVER WO 02/0088672 IN VIEW OF U.S. PATENT No. 5,637,224

Claims 1-2, 6, 13-20, 22-24, 46 48-50 and 52-53 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 02/0088672 (herein referred "Varian, Inc.", and further in view of U.S. Patent No. 5,637,224 to Sirkar (herein referred "Sirkar").

Regarding claims 1 and 52, the Examiner alleged that Varian, Inc. discloses a device for performing clean-up and enrichment of analytes of interest, wherein a donor sample comprising an analyte of interest is inserted into a tubular hollow porous fiber into a well, where the hollow fiber comprises of a liquid extraction membrane. The Examiner stated that the hollow fiber enclosing an internal cavity is separated from the donor sample by the extraction membrane, a static acceptor liquid is placed in the internal cavity, and the analyte of interest is enriched by extracting the analyte of interest from the donor through the extraction membrane into the acceptor liquid in the internal cavity. The Examiner alleged that the analyte of interest is transferred and the acceptor liquid from the internal cavity is transferred to the analysis device

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(see page 1, line 29 - page 2, line 5). The Examiner conceded that Varian, Inc. does not disclose a membrane comprising a support comprising a fatty acid ester, a vegetable oil or a silicon oil. The Examiner alleged that Sirkar discloses a vaporizable solute transfer system for transferring a vaporizable solute from an aqueous feed solution to an extract liquid comprising a fluid tight housing, and that within the housing is preferentially wettable porous membrane that divides the housing into two chambers. The Examiner further alleged that one chamber contains a feed solution and the other contains a liquid extractant, and that the membrane is preferably in the form of a hollow fiber and is mechanically strong enough to withstand the interface immobilizing pressure difference imposed across the membrane. The Examiner stated that the extractant liquid refers to a polar organic liquid that can be used to form a liquid membrane, and that the extractant liquid may be any organic liquid membrane including decanol, octanol, long chain alkanes, vegetable oil or mineral oil. The Examiner alleged that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid membrane to be vegetable oil to provide effective membrane separation and isolation of products such as volatile organic compounds from a sample.

In response, claim 1 has been amended to delete the term vegetable oil, and also incorporates the limitations of canceled claim 4. Hence this rejection has been overcome. This amendment has been made merely to expedite prosecution and aid efficient advancement of this application to issuance, and is not intended as an acquiescence to any rejection. Accordingly, claims 2, 5, 6, 9-19, 46, 48 and 54 dependent from claim 1, are likewise allowable over the cited art.

With respect to claims 52 and 53, Applicant asserts that the Examiner has erred in rejecting these claims. Claim 52 is drawn to a device for carrying out liquid phase microextraction of at least one analyte from an aqueous sample, said device comprising a hollow fiber comprised of a porous polymeric substrate and a liquid membrane comprising a silicone oil and one or more of a fatty acid ester, a vegetable oil, or a nitroarylalkylether. Again, the Examiner has **not** alleged that such mixtures are disclosed in the cited art. Sirkar in particular does not teach or suggest using mixtures of extractant liquids, and cannot render obvious the subject matter of claim 52 in combination with Varian, Inc. In addition, Applicants submit that

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one skilled in the art would **not** have found any particular motivation to combine these liquids for use in a liquid extraction membrane. Similarly, with respect to claim 53, which recites "wherein the liquid membrane further comprises a carrier," the cited references do not teach or suggest all of the recited features, and cannot render claim 53 obvious.

With respect to claim 20, the Examiner alleged that Varian, Inc. discloses a device for performing clean-up and enrichment of analytes of interest, wherein a donor sample comprising an analyte of interest is inserted into a tubular hollow porous fiber into a well, where the hollow fiber comprises of a liquid extraction membrane. The Examiner stated that the hollow fiber enclosing an internal cavity is separated from the donor sample by the extraction membrane, a static acceptor liquid is placed in the internal cavity, and the analyte of interest is enriched by extracting the analyte of interest from the donor through the extraction membrane into the acceptor liquid in the internal cavity. The Examiner alleged that the analyte of interest is transferred and the acceptor liquid from the internal cavity is transferred to the analysis device (see page 1, line 29 - page 2, line 5). The Examiner conceded that Varian, Inc. does not disclose a membrane comprising a support comprising a fatty acid ester, a vegetable oil or a silicon oil. The Examiner alleged that Sirkar discloses a vaporizable solute transfer system for transferring a vaporizable solute from an aqueous feed solution to an extract liquid comprising a fluid tight housing, and that within the housing is preferentially wettable porous membrane that divides the housing into two chambers. The Examiner further alleged that one chamber contains a feed solution and the other contains a liquid extractant, and that the membrane is preferably in the form of a hollow fiber and is mechanically strong enough to withstand the interface immobilizing pressure difference imposed across the membrane. The Examiner stated that the extractant liquid refers to a polar organic liquid that can be used to form a liquid membrane, and that the extractant liquid may be any organic liquid membrane including decanol, octanol, long chain alkanes, vegetable oil or mineral oil. The Examiner alleged that it would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the liquid membrane to be vegetable oil to provide effective membrane separation and isolation of products such as volatile organic compounds from a sample.

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In response, claim 20 has been amended to delete the term vegetable oil, and hence this rejection has been overcome. This amendment has been made merely to expedite prosecution and aid efficient advancement of this application to issuance, and is not intended as an acquiescence to any rejection. Accordingly, claims 22-24, 49, 50, 55, and 56, dependent from claim 20, are likewise allowable over the cited art.

With respect to claims 16, 17 and 24, Applicants assert that the Examiner has erred in maintaining the rejections. As previously argued, these claim limitations are not "result effective variables" susceptible to routine experimentation. However, this argument is now rendered moot as claims 1 and 20, from which claims 16, 17 and 24 depend, are now allowable.

Regarding claims 9-12, the Examiner alleged that these claims are unpatentable in view of Varian, Inc. and Sirkar as applied to claim 10 above and further in view of Macasek *et al.* First of all, Applicants do not see anywhere that the Examiner has applied Varian Inc. and Sirkar to reject claim 10. Second, as the rejection of claim 1, from which claims 9-12 depend has been overcome, Applicants respectfully submit that claims 9-12 are likewise patentable over the cited art, and this rejection has been overcome.

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As all rejections have been addressed and overcome, Applicants respectfully request allowance of the claims and passage of this application to issue.

If the Examiner has any questions concerning this communication, or would like to discuss the application, the art, or other pertinent matters, he is welcome to contact the undersigned attorney at (650) 565-8185.

Respectfully submitted,

Dated: July 28, 2008

By: 

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